

DECORATIVE CARVING MADE EASY

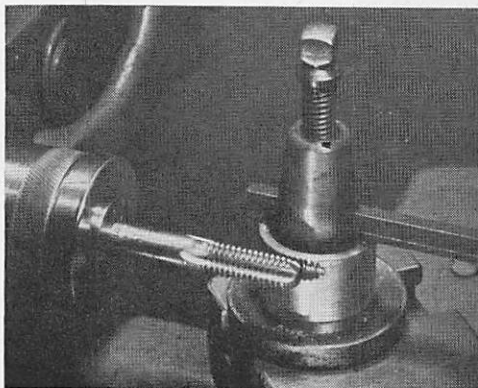
—with a Fly Cutter

By R. J. DeCristoforo

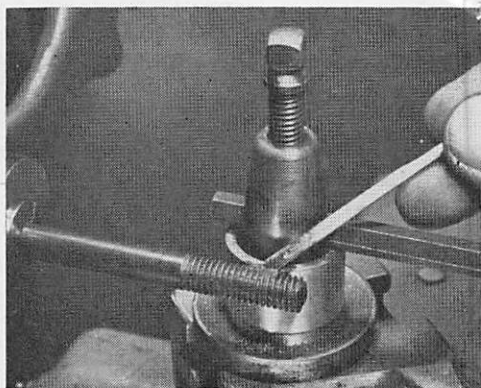


DOOR PANELS of the end-table chest shown above have easily-made, decorative fly-cutter carvings. Same technique can be used to edge-carve stock for making picture frames (left) or distinctive moldings

Machinist's Trick for Lapping Threads



In certain types of assemblies where it is desirable to reduce thread lash to the minimum, machinists first cut a full depth thread and then lap it to a precise fit. One simple way of doing this where the thread is fairly short is to clamp a length of brass tubing on the tool post as in the left-hand photo above. Then a plug tap (use a precision high-speed-steel tap) is mounted in the collet chuck and the lathe set up to cut surface threads at one spot in the side of the brass tube. Lathe screw feed should be set for the same number of threads as



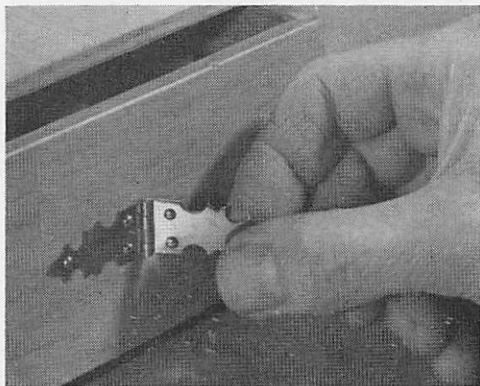
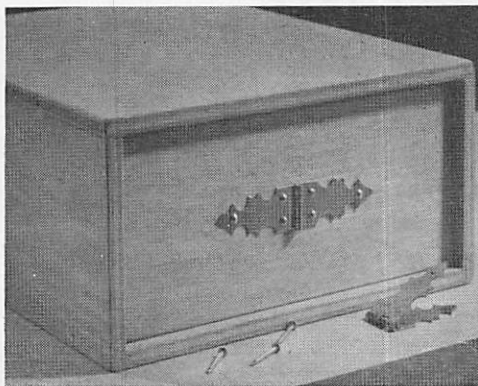
those in the tap. Drop in the back gears of the lathe and then hand feed so that the tap cuts to the full depth in two or three passes. This operation forms the lap.

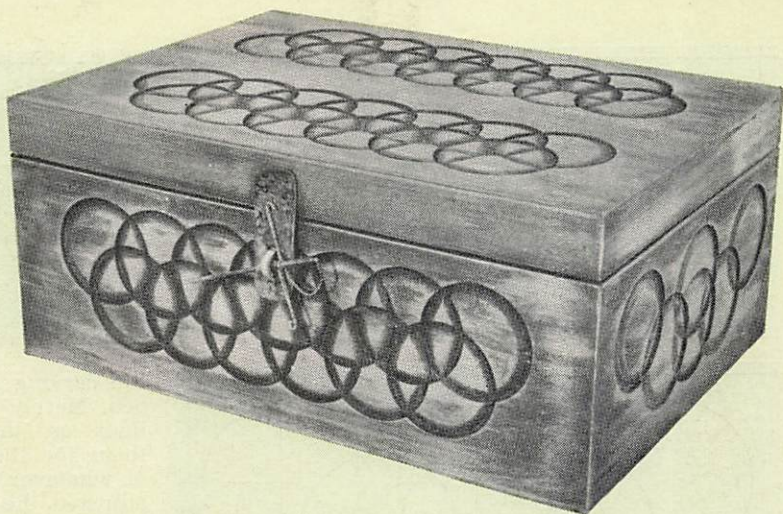
Now the tap is removed from the chuck and replaced by the threaded workpiece. The lap is coated with a shop lapping compound or a fine valve-grinding compound and the lap is fed back and forth against the workpiece, using the same screw-cutting feed and speed. Usually two passes will be sufficient but in some cases three or more may be necessary.

Ornamental Hinge Masquerades As Drawer Pull

You don't normally think of hinges as drawer pulls, but if you like novel applications and need a flush pull, an ornamental hinge can serve the purpose nicely. Brass hinges with fixed pins and scrolled leaves usually are best on small drawers. First you polish or buff the brass to a high sheen and smooth any sharp edges or burrs. Then fill the holes on the swinging leaf with small brass screws of the size used to attach the hinge. Cut the screws off and peen the cut ends on the back face

of the loose leaf. In doing so, watch that you do not flatten the screw heads. Seat the heads in concave holes drilled in a scrap of metal. Next stand the hinge on edge on an anvil or other metal surface and peen the hinge pin lightly until the hinge opens and closes with sufficient friction to hold the loose leaf at any position. Now attach to the drawer with screws in one leaf as pictured, centering the hinge pin on the drawer front. After polishing, apply lacquer to prevent tarnishing.





CIRCLE CUTTERS are usually used to make holes that are too large to bore with ordinary drills and bits. But the type shown here (often called a fly cutter) can also be used to create intricate geometric carvings that rival professional work in appearance.

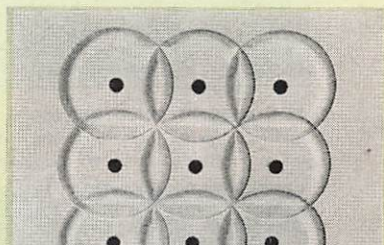
This drill-press accessory differs from the conventional circle cutter in that it employs a horizontal machine bit, locked in a central hub at a slight angle. Other cutters have a vertical bit held at the end of a horizontal shaft; such types do not make the bevel cut required for the carved effect pictured here.

All cutters have a pilot drill that passes through the hub to anchor the cutter's spindle at the center of the circle. In normal use, the hole left by this drill is in the waste stock that falls away when the bit bites through the work. In fly-cutter carving, however, you don't cut *through* the stock, so the pilot hole will remain. This can be a pleasing accent in large designs—such as the cabinet doors shown on the opposite page. If you prefer nonperforated panels, you can plug these center holes with dowels of contrasting wood. Or you can avoid the hole altogether by replacing the pilot with a stub of drill rod that won't penetrate the carved surface. You just file one end of the rod to produce a rabbet set in the same angle as the machine-bit groove in the pilot drill.

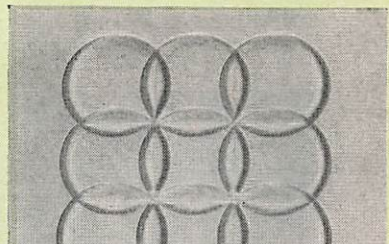
When using the pilot drill, the layout for

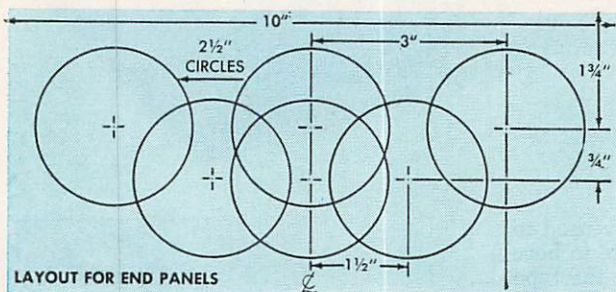
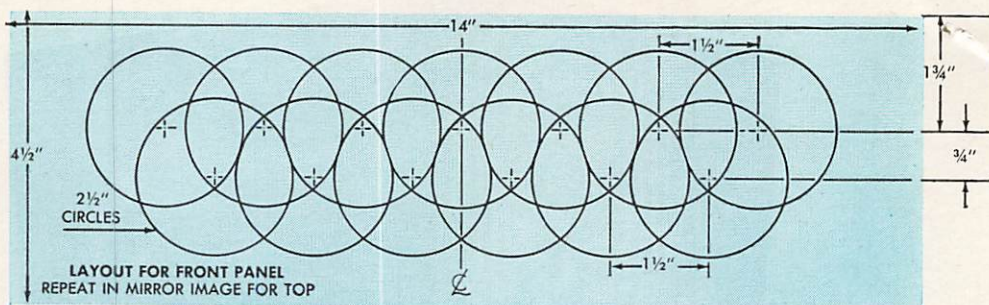
ARROW in photo at right points to slanted groove in pilot drill in which machine-bit cutter seats. Setscrew in hub bears down on cutter and drill. To modify the cutter to create carvings without a center hole, a piece of drill rod, rabbeted (arrow, lower photo) is substituted for the pilot drill. Samples of work done by different units are shown in accompanying photos

WANT HOLES?
Use the pilot drill

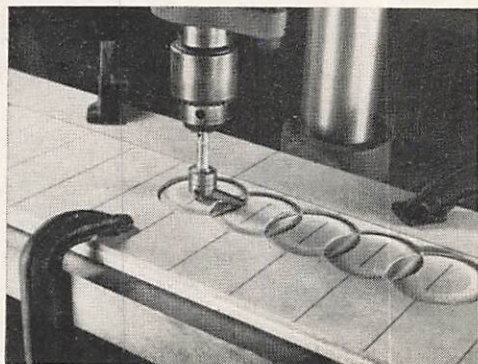


IF NOT,
replace pilot with rabbeted drill rod

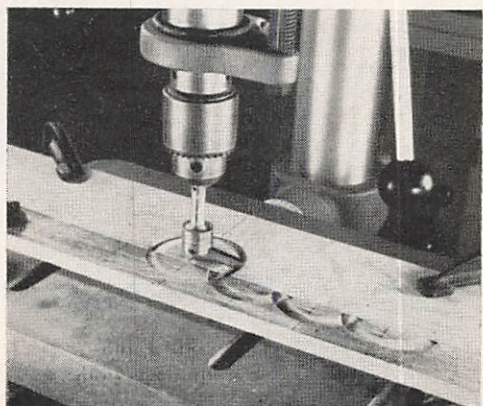




YOU NEEDN'T DRAW CIRCLES in laying out work—just mark centerlines for uniform spacing. Line these up with guide mark on clamped fence, as below



CENTERLINE SYSTEM works, too, when work receives only part of cut, as for picture-frame molding shown on page 194. Wider fence moves work to side of cutter



the carving pattern is simplified. Merely draw intersecting lines on the work, spacing them for the desired overlap of whatever size circle you've adjusted the bit to cut. Then drop the tip of the drill onto each intersection.

Actual layouts of the sides of the chess box are detailed above, as an example. Without the pilot, the problem of positioning these circles accurately is solved by clamping the fence or guide to the drill-press table. The fence provides uniform edge-distance, and a line scribed across it to indicate the spindle center can be lined up with the pattern marks on the work. It's a good idea to clamp the work securely before each cut.

Work at a low speed, feeding the cutter slowly into the work. Use a depth-stop to control depth of cut and a back-up block to minimize break-through damage, if you're using the pilot drill. Test each new pattern on scrap to avoid spoilage.

The fly cutter shown is the Adjust-A-Drill, produced in two sizes by the Jet Tool Co., Lemon Grove, California. Prices range from \$3 to \$5.

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FASTER WAY TO MAKE edge-carved moldings is to cut full circles and slice them in half. Two center cuts dispose of pilot holes, give you two identical strips

